

The Effect of Nadisodhan Pranayama on Blood Hemoglobin among healthy volunteers

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Abstract

The aim of this study was to observe the effect of Nadisodhan Pranayama (NSP) on blood Hb of the subjects with the age range 20-40 years. For this 40 subjects composed of 20 males and 20 females were drawn from Yug-Shilpi Training (YST) of Shantikunj, Haridwar in 2003, November, by using Simple Random Sampling without replacement (SRSWOR). Pre-post data were noted before and after intervention of NSP for 30 days by using Sahli's haemometer. Calculated t-values 6.525, 7.665 and 2.85 for total, female and male subjects are significant at $p < 0.0025$, $p < 0.0025$ and $p < .005$ for df; 39, 19 and 19 respectively. The result met concluded that NSP plays positive significant role to enhance blood Hb level of the subjects within normal range.

Key words: Nadisodhan Pranayama (NSP), Yug Shilpi Training (YST), Simple Random Sampling without Replacement, (SRSWR), Hemoglobin (Hb).

Introduction

This research study was entitled the "Impact of Nadi-shodhan Pranayama(NSP) on blood hemoglobin" of the subjects with age range 20-40 years. For this study, NSP propounded by founder of all world Gayatri pariwar, Pandit Sriram Sharma Acharaya was taken as independent variable (IV) and blood Hb of the subjects was treated as dependent variable (DV). Age and gender were treated as moderating variables (MVs).

In Hatha Yoga Pradeepika (2/7-10) and Gherand Samhita (5/32-44), the method of Nadi-shodhan Pranayama (NSP) is different than the technique adopted under study. NSP has been accepted as an elementary and a cleansing practice to clean the subtle energy channels of bioplasmic body before practice of other Pranayamas (Kumbhakas).

Some of the previous findings related to the effect of Yoga practices have been found with involvement of Pranayama. Bhogal,R.S et al., (1999) have observed that Meditation increase non significantly in blood Hb of subjects¹. Khare, K.C. et al., (1989) have found remarkable improve in Hb level, total WBC count and PCV as a consequence of Yoga practice². Deshpande, R. R. & Bhole, M.V. (1982) has concluded insignificant increase in Hb due to effect

of Kapalbhathi³. Govindarajulu,N. & Shivanadanam,G. et al., (2004) have met significant mean gain in RBC count as a consequence of Yoga practices⁴.

Objectives:

This study has aimed to study the effects of NSP on Blood Hb level of the male subjects, blood Hb level of the female subjects and Blood Hb level of the all subjects

After going thorough aforesaid related literatures, it seemed that practice of NSP may be helpful to enhance the blood Hb level and hence the researcher's hypotheses were set directional.

Hypothesis: 1. Practice of NSP causes significant increase in blood Hb of the all subjects.

Hypothesis: 2. Practice of NSP causes significant increase in blood Hb of the female subjects.

Hypothesis: 3. Practice of NSP causes significant increase in blood Hb of the male subjects.

Normally, optimal level of blood Hb is necessary for proper gases exchange among lungs and tissues and sound immunity. Hence, it was relevant to conduct this study to test the positive effects of NSP in blood Hb implied in the reviewed related literatures and to highlight its importance to maintain sound health.

Methodology

Sampling: This study was conducted in 40 samples. They were enrolled in Yug Shilpi Satra of one month in Nov.2003 at Shantikunj, Haridwar. Samples were selected by applying the simple random sampling without replacement (SRSWR) using lottery method. 20 were males and 20 were females of age range 20-40 yrs.

Research design: pre-post single group, Symbolically: A Q₁ X Q₂
Where, A= single group, Q₁= pre- test, X= NSP, (30 min. for each morning and evening per day) and Q₂= Post-test

Procedures

Firstly, by using Shahli's hemoglobinometer, blood Hb of each subject was measured and post measurement of blood Hb for the same subjects were taken after allowing practice of NSP for 30 days. During the practice, each subject was allowed for inhalation (Puraka), retention (kumbhaka) and exhalation (Rechaka) in equal ratio, thrice through left nostril and the same through right nostril and then inhalation through both nostrils and the exhalation through

mouth which is supposed one round. Same procedure was suggested with different deep feelings in Puraka, Kumbhaka and Rechaka steps. The reference of this technique can be obtained from Super Science of Gayatri written by Pandit Shriram Sharma Acharaya, founder of All world Gayatri Pariwar⁵.

Results

Table- 1. Showing the Hb (gm %) for Total Subjects

	N	Mean	SD	r	SEmd	df	t-value	Level of significance
Pre	40	10.92	1.64	0.82	0.157	39	6.525	0.0025
Post	40	11.95	1.02					

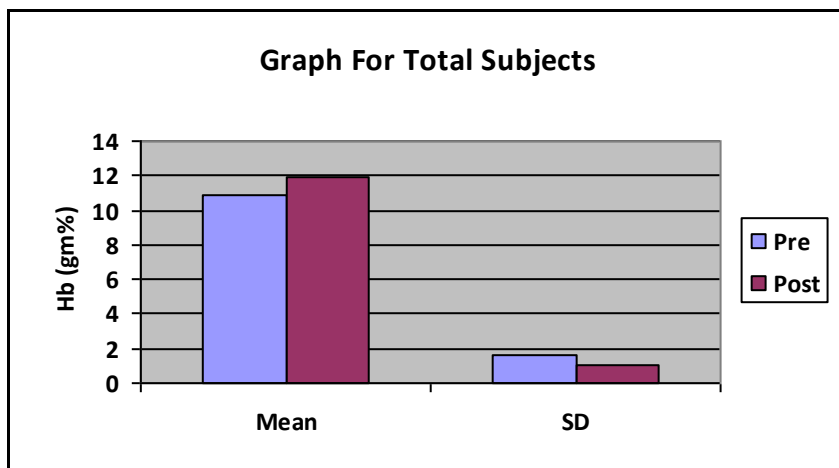


Table-2 showing Hb (gm %) for Female Subjects

	N	Mean	SD	r	SEmd	df	t-value	Level of significance
Pre	20	10.15	1.31	0.77	0.185	19	7.665	0.0025
Post	20	11.58	0.98					

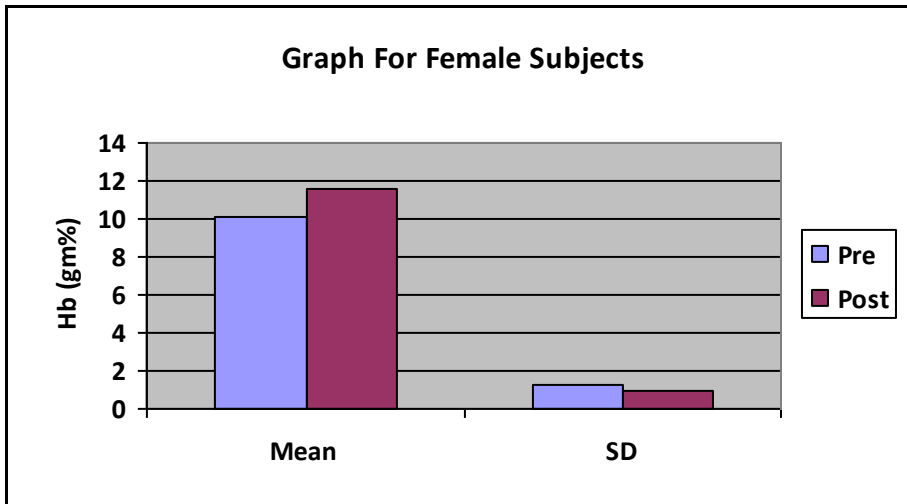
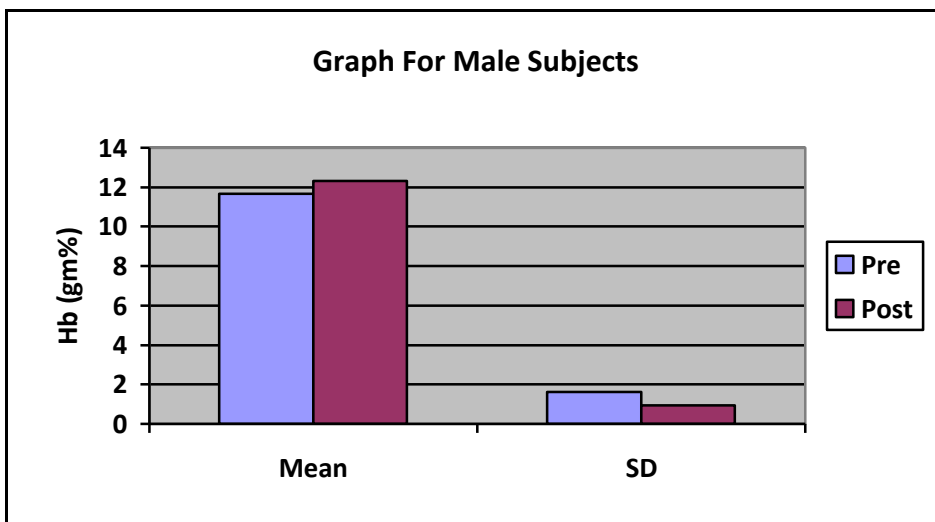


Table-3 showing the Hb(gm %) for Male Subjects

	N	Mean	SD	r	SEmd	df	t-value	Level of significance
Pre	20	11.68	1.61	0.81	0.23	19	2.87	.005
Post	20	12.33	0.95					



Discussion

From Table 1. Calculated t- value = 6.525 > Critical t- value = 2.576 at $p < 0.0025$ for df 39. Hence, Practice of NSP causes insignificant difference in Hb level of the all subjects is rejected at $p < 0.0025$ for df = 39. Consequently, the researcher's hypothesis, practice of NSP causes a significant increase in Hb level of all subjects is accepted.

From table 2- calculated t- value = 7.665 > Critical t- value = 2.861 at $p < 0.0025$ for df 19. Hence, Practice of NSP causes insignificant difference in Hb level of the female subjects is rejected at $p < 0.0025$ for df = 19. Consequently, researcher's hypothesis, practice of NSP causes a significant increase in Hb level of the female subjects is accepted.

From table 3- calculated t- value = 2.87 is significant at $p < .005$ for df 19. Hence, Practice of NSP causes insignificant difference in Hb level of the male subjects is rejected at $p < .005$ for df = 19. Consequently, researcher's hypothesis, practice of NSP causes a significant increase in Hb level of the male subjects is accepted.

Table 1, 2&3 clearly revealed that the calculated t-values are significant at $p < 0.0025$ and $p < .005$ respectively after 30 days NSP intervention. This attributes to the fact that the NSP intervention for one month had brought significant increase in the Hb level towards upper range of normalcy.

During the practice of NSP, in Kumbhaka phase low oxygen state is (hypoxia) created. The principal stimulus for RBC production in low oxygen state is a circulating hormone called erythropoietin. When the erythropoietin system is functional, hypoxia causes a marked increase in erythropoietin production, and erythropoietin in turn enhances RBC production until the hypoxia is relieved. In this stage, the rate of RBC production can rise to perhaps 10 or more time than normal⁶.

Moreover, as the selected subjects in this study were of normal health and suggested to take normal diet. It was hypothesized that there would be significant increase in Hb level of subjects due to practice of NSP. Practice of NSP brought change in Hb level, but it seemed that the change appeared towards upper limit of normalcy which signifies a healthy physiological status.

So, it can be concluded that the practice of NSP is physiologically safe for normal people of age group under study and hence can be recommended safely for other age groups to promote health. It can also be referred carefully to anemic patients as a therapeutic complement.

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